module ieee802-ethernet-pon {

yang-version 1.1;

namespace "urn:ieee:std:802.3:yang:ieee802-ethernet-pon";

prefix "eth-pon";

import ietf-yang-types {

prefix "yang";

reference "IETF RFC 7223";

}

import ietf-interfaces {

prefix "if";

reference "IETF RFC 7223";

}

import ieee802-ethernet-interface {

prefix "eth-if";

}

organization

"IEEE 802.3 Ethernet Working Group

Web URL: http://www.ieee802.org/3/";

contact

"Web URL: http://www.ieee802.org/3/cf/";

description

"This module contains a collection of YANG definitions for

managing the Multi Point Control Protocol for Ethernet PON (EPON),

as defined in IEEE Std 802.3, Clause 64/77

This YANG module augments the 'ethernet' module.";

reference

"IEEE Std 802.3-2018, Clause 64/77, unless dated explicitly

IEEE Std 802.3.1-2013, Clause 9, unless dated explicitly";

typedef mpcp-supported {

type boolean;

description

"This object indicates that the given Ethernet interface

supports MPCP, i.e., it is an Ethernet PON (EPON) interface.";

}

typedef mpcp-llid {

type uint64 {

range "0 .. 32767";

}

description

"Logical Link Identifiers (LLIDs) are used to identify a single

MAC from a number of MACs which may be present in the

EPON OLT or ONU. LLIDs between the value of 0x07FFE

and 0x7FFF are reserved for ONU discovery and registration.

Other LLIDs are dynamically assigned by the OLT during the

registration process. For a complete description of how the

LLID is used in an EPON device; see IEEE Std 802.3,

65.1.3.3 for 1G-EPON and 76.2.6.1.3 for 10G-EPON.";

reference

"IEEE Std 802.3, 76.2.6.1.3.2 (1G-EPON and 10G-EPON)";

}

typedef mpcp-maximum-queue-count-per-report {

type uint8 {

range "0..7";

}

default "0";

description

"Defines the maximum number of queues (0-7) in the REPORT

MPCPDU as defined in IEEE Std 802.3, Clause 64 and Clause 77.";

}

typedef mpcp-llid-count {

type uint64 {

range "0 .. 32767";

}

description

"Indicates the number of registered LLIDs. The initialization value is

0. This is applicable for an OLT with the same value for all virtual

interfaces and for an ONU.";

reference

"IEEE Std 802.3, 76.2.6.1.3.2 (1G-EPON and 10G-EPON)";

}

typedef mpcp-admin-state {

type enumeration {

enum enabled {

description

"When selecting the value of 'enabled', the MultiPoint

Control Protocol sublayer on the OLT / ONU is enabled.";

}

enum disabled {

description

"When selecting the value of 'disabled', the MultiPoint

Control Protocol sublayer on the OLT / ONU is disabled.";

}

}

description

"Enumeration of valid administrative states for a MultiPoint MAC

Control sublayer on the OLT or ONU";

reference

"IEEE Std 802.3, 30.3.5.2.1";

}

typedef mpcp-mode {

type enumeration {

enum olt {

description

"mpcp mode: olt";

}

enum onu {

description

"mpcp mode: onu";

}

}

description

"Enumeration of valid mpcp modes for Ethernet interfaces.";

reference

"IEEE Std 802.3, 30.3.5.1.3";

}

typedef mpcp-logical-link-state {

type enumeration {

enum unregistered {

description

"MPCP registration state: logical link is NOT registered";

}

enum registering {

description

"MPCP registration state: logical link is currently in the

process of registering";

}

enum registered {

description

"MPCP registration state: logical link is currently

registered";

}

}

description

"Enumeration of valid MPCP registration states for Ethernet

interfaces";

reference

"IEEE Std 802.3, 30.3.5.1.6";

}

typedef mpcp-logical-link-admin-state {

type enumeration {

enum reset {

description

"When read, the value of 'reset' indicates that the given

logical link on the OLT / ONU has been reset.

When set, the value of 'reset' requests the OLT / ONU to

reset the given logical link.";

}

enum operate {

description

"When read, the value of 'operate' indicates that the

given logical link on the OLT / ONU has moved into

operating mode.

When set, the value of 'operate' requests the OLT / ONU to

move the given logical link into operating mode.";

}

enum disabled {

description

"When read, the value of 'disabled' indicates that the

given logical link on the OLT / ONU has been disabled.

When set, the value of 'disabled' requests the OLT / ONU

to disable the given logical link.";

}

enum enabled {

description

"When read, the value of 'enabled' indicates that the

given logical link on the OLT / ONU has been enabled.

When set, the value of 'enabled' requests the OLT / ONU to

enable the given logical link.";

}

enum unknown {

description

"When read, the value of 'unknown' indicates that the

status of the given logical link on the OLT / ONU is

currently not known.

An attempt to set the value of 'unknown' is illegal.";

}

enum registered {

description

"When read, the value of 'registered' indicates that the

given logical link on the OLT / ONU has been registered.

When set, the value of 'registered' requests the OLT / ONU

to register the given logical link.";

}

enum deregistered {

description

"When read, the value of 'deregistered' indicates that the

given logical link on the OLT / ONU has been deregistered.

When set, the value of 'deregistered' requests the

OLT / ONU to deregister the given logical link.";

}

enum reregistered {

description

"When read, the value of 'reregistered' indicates that the

given logical link on the OLT / ONU has been reregistered.

When set, the value of 'reregistered' requests the

OLT / ONU to reregister the given logical link.";

}

}

description

"Enumeration of valid administrative states for a logical link

on the OLT or ONU";

}

typedef ompe-mode {

type enumeration {

enum unknown {

description

"omp-emulation mode: unknown = system is initializing";

}

enum olt {

description

"omp-emulation mode: olt";

}

enum onu {

description

"omp-emulation mode: onu";

}

}

description

"Enumeration of valid OMP-Emulation modes for Ethernet

interfaces";

reference

"IEEE Std 802.3, 30.3.7.1.2";

}

typedef fec-capability {

type enumeration {

enum unknown {

description

"FEC capability: unknown = system is initializing";

}

enum supported {

description

"FEC capability: supported";

}

enum "not supported" {

description

"FEC capability: not supported";

}

}

description

"Enumeration of valid FEC capability values for Ethernet

interfaces with enabled MPCP";

reference

"IEEE Std 802.3, 30.5.1.1.15";

}

typedef fec-mode {

type enumeration {

enum unknown {

description

"FEC mode: unknown = system is initializing";

}

enum disabled {

description

"FEC mode: disabled = FEC is disabled for the given

logical link (both Tx and Rx directions)";

}

enum enabled-Tx-Rx {

description

"FEC mode: enabled-Tx-Rx = FEC is enabled for the given

logical link in both Tx and Rx directions";

}

enum enabled-Tx-only {

description

"FEC mode: enabled-Tx-only = FEC is enabled for

the given logical link but only in Tx direction";

}

enum enabled-Rx-only {

description

"FEC mode: enabled-Rx-only = FEC is enabled for

the given logical link but only in Rx direction";

}

}

description

"Enumeration of valid FEC modes for Ethernet interfaces";

reference

"IEEE Std 802.3, 30.5.1.1.16";

}

typedef trx-admin-state {

type enumeration {

enum enabled {

description

"When read as 'enabled', the transmitter is enabled and

operating under the control of the logical control protocol.

When set to 'enabled', the transmitter is enabled to

operate under the control of the logical control protocol.";

}

enum disabled {

description

"When read as 'disabled', the transmitter is disabled.

When set to 'disabled', the transmitter is disabled.";

}

}

description

"Enumeration of valid administrative states for an optical

transceiver";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfTransmitEnable";

}

feature trx-power-level-reporting-supported {

description

"This object indicates the support for optical transceiver power

level monitoring and reporting capability. When 'true', the given

interface supports the optical power level monitoring and reporting

function. Otherwise, the value is 'false'.";

reference "";

}

feature

fec-supported {

description

"This object indicates the support of operation of the optional FEC

sublayer of the 1000BASE-PX PHY specified in IEEE Std 802.3, 65.2. The

value of 'unknown' is reported in the initialization, for non FEC

support state or type not yet known. The value of 'not supported' is

reported when the sublayer is not supported. The value of 'supported'

is reported when the sublayer is supported. This object is applicable

for an OLT, with the same value for all logical links, and for an ONU.

All objects in the fec/statistics container have a zero value

when the interface is not supporting FEC.";

reference

"IEEE Std 802.3, 30.5.1.1.15";

}

augment "/if:interfaces/if:interface/eth-if:ethernet" {

description

"Augments the definition of Ethernet interface (/if:interfaces/

if:interface/eth-if:ethernet) module with nodes

specific to Ethernet PON (EPON)";

leaf fec-mode {

if-feature

fec-supported;

type fec-mode;

description

"This object reflects the current administrative state of the

FEC function for the given logical link on an ONU or OLT.

When reading the value of 'disabled', the FEC function on the

given logical link is disabled.

When reading the value of 'enabled-Tx-Rx', the FEC function on

the given logical link is enabled in both Tx and Rx directions.

When reading the value of 'enabled-Tx-only', the FEC function

on the given logical link is enabled in Tx direction only.

When reading the value of 'enabled-Rx-only', the FEC function

on the given logical link is enabled in Rx direction only.

When reading the value of 'unknown', the state of the FEC

function on the given logical link is unknown or the FEC

function is currently initializing.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3, 30.5.1.1.16";

}

leaf mpcp-admin-state {

type mpcp-admin-state;

description

"This object reflects the current administrative state of the

MultiPoint MAC Control sublayer, as defined in IEEE Std 802.3,

Clause 64 and Clause 77, for the OLT / ONU.

When reading the value of 'enabled', the MultiPoint Control

Protocol on the OLT / ONU is enabled.

When reading the value of 'disabled', the MultiPoint Control

Protocol on the OLT / ONU is disabled.

This object is applicable for an OLT and an ONU. It has the same

value for all logical links.";

reference

"IEEE Std 802.3, 30.3.5.1.2";

}

leaf mpcp-logical-link-admin-state {

type mpcp-logical-link-admin-state;

description

"This object reflects the current administrative state of a

logical link on an ONU or OLT.

When reading the value of 'reset', the given logical link is

undergoing a reset.

When reading the value of 'unknown', the current status of the

given logical link is unknown and the link might be undergoing

initialization.

When reading the value of 'operate', the given logical link is

operating normally.

When reading the value of 'disabled', the given logical link

was disabled (powered down).

When reading the value of 'enabled', the given logical link

was enabled (powered up).

When reading the value of 'registered', the given logical link

was requested to perform registration.

When reading the value of 'deregistered', the given logical

link was requested to perform deregistration.

When reading the value of 'reregistered', the given logical

link was requested to perform reregistration.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectRegisterAction";

}

leaf trx-transmit-admin-state {

when

"../../eth-if:ethernet/eth-pon:mpcp-admin-state = 'enabled'";

if-feature

trx-power-level-reporting-supported;

type trx-admin-state;

description

"This object reflects the current status of the transmitter in

the optical transceiver.

When read as 'enabled', the optical transmitter is enabled and

operating under the control of the logical control protocol.

When read as 'disabled', the optical transmitter is disabled.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

The value of this object is only reliable when

/if:interfaces-state/if:interface/eth-if:ethernet/

'mpcp-admin-state' is equal to 'enabled'.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfTransmitEnable";

}

container capabilities {

config false;

description

"Contain all Ethernet interface specific capabilities.";

leaf mpcp-supported {

type mpcp-supported;

default

"true";

description

"This object indicates that the given Ethernet interface

supports MPCP, i.e., it is an Ethernet PON (EPON) interface.";

}

}

container statistics-mpcp {

config false;

description

"This container defines a set of MPCP-related statistics

counters of an Ethernet interface implementing MPCP, as

defined in IEEE Std 802.3, Clause 64 and Clause 77.";

leaf mpcp-mac-ctrl-pkts-out {

type yang:counter64;

units frames;

config false;

description

"A count of MPCP frames passed to the MAC sublayer for

transmission.

This counter is incremented when a MA\_CONTROL.request

service primitive is generated within the MAC control

sublayer with an opcode indicating an MPCP frame.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities of this counter can occur at

re-initialization of the management system, and at other

times as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.7";

}

leaf mpcp-mac-ctrl-pkts-in {

type yang:counter64;

units frames;

config false;

description

"A count of MPCP frames passed by the MAC sublayer to the

MAC Control sublayer.

This counter is incremented when a frame is received at the

interface which is an MPCP frame or has a Length/Type Ethernet

header field value equal to the reserved Type for

802.3\_MAC\_Control as specified in IEEE Std 802.3, 31.4.1.3.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.8";

}

leaf mpcp-discovery-window-count {

type yang:counter64;

units "discovery windows";

config false;

description

"A count of discovery windows generated by the OLT.

The counter is incremented by one for each generated

discovery window.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU, the value should be zero.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.22";

}

leaf mpcp-discovery-timeout-count {

type yang:counter64;

units "discovery timeouts";

config false;

description

"A count of the number of times a discovery timeout occurs.

This counter is incremented by one for each discovery

processing state-machine reset resulting from timeout

waiting for message arrival.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.23";

}

leaf mpcp-register-req-out {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER\_REQ MPCP frame

transmission occurs.

This counter is incremented by one for each REGISTER\_REQ MPCP

frame transmitted as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU,

the value should be zero.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.12";

}

leaf mpcp-register-req-in {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER\_REQ MPCP frame

reception occurs.

This counter is incremented by one for each REGISTER\_REQ MPCP

frame received as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. At the ONU, the

value should be zero for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.17";

}

leaf mpcp-register-ack-out {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER\_ACK MPCP frame

transmission occurs.

This counter is incremented by one for each REGISTER\_ACK MPCP

frame transmitted as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. The value should

be zero for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.10";

}

leaf mpcp-register-ack-in {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER\_ACK MPCP frame

reception occurs.

This counter is incremented by one for each REGISTER\_ACK MPCP

frame received as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU, the value should be zero.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.15";

}

leaf mpcp-report-out {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REPORT MPCP frame

transmission occurs.

This counter is incremented by one for each REPORT MPCP frame

transmitted as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. The value should

be zero for each logical link.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.13";

}

leaf mpcp-report-in {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REPORT MPCP frame

reception occurs.

This counter is incremented by one for each REPORT MPCP frame

received as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU, the value should be zero.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.5.1.18";

}

leaf mpcp-gate-out {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a GATE MPCP frame

transmission occurs.

This counter is incremented by one for each GATE MPCP frame

transmitted as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU, the value should be zero.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.9";

}

leaf mpcp-gate-in {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a GATE MPCP frame reception

occurs.

This counter is incremented by one for each GATE MPCP frame

received as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. The value should

be zero for each logical link.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.14";

}

leaf mpcp-register-out {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER MPCP frame

transmission occurs.

This counter is incremented by one for each REGISTER MPCP frame

transmitted as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the ONU,

the value should be zero.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.11";

}

leaf mpcp-register-in {

type yang:counter64;

units frames;

config false;

description

"A count of the number of times a REGISTER MPCP frame

reception occurs.

This counter is incremented by one for each REGISTER MPCP frame

received as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. The value should

be zero for each logical link.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.5.1.16";

}

}

container statistics-ompe {

description

"This container defines a set of OMP-Emulation-related

statistics counters of an Ethernet interface implementing MPCP

, as defined in IEEE Std 802.3, Clause 65 and Clause 76.";

reference

"IEEE Std 802.3.1, dot3OmpEmulationStatEntry";

leaf ompe-pkts-in-errored-sld {

type yang:counter64;

units frames;

config false;

description

"A count of frames received that do not contain a valid SLD

field as defined in IEEE Std 802.3, 65.1.3.3.1 or

76.2.6.1.3.1, as appropriate.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.7.1.3";

}

leaf ompe-pkts-in-errored-crc8 {

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1 as

appropriate, but do not pass the CRC-8 check as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3 as appropriate.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities of this counter can occur at

re-initialization of the management system and at other

times, as indicated by the value of the

ifCounterDiscontinuityTime object.";

reference

"IEEE Std 802.3, 30.3.7.1.4";

}

leaf ompe-pkts-in-with-bad-llid {

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field, as

defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, and pass the CRC-8 check as defined in IEEE Std

802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate, but are

discarded due to the LLID check.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.7.1.5";

}

leaf ompe-pkts-in-with-good-llid {

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1 as

appropriate, but do not pass the CRC-8 check as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3 as appropriate.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.7.1.4";

}

leaf ompe-pkts-in {

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, and pass the CRC-8 check as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.3.7.1.6 (ONU) and 30.3.7.1.7 (OLT)";

}

leaf ompe-pkts-in-not-match-onu-llid-broadcast {

when

"../../ompe-mode = 'onu'";

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, pass the CRC-8 check, as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate,

and contain the broadcast bit in the LLID and not the ONU's

LLID (frame accepted) as defined in IEEE Std 802.3,

Clause 65 and Clause 76, as appropriate.

This object is applicable for an ONU only.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3OmpEmulationBroadcastBitNotOnuLlid";

}

leaf ompe-pkts-in-match-onu-llid-not-broadcast {

when

"../../ompe-mode = 'onu'";

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, pass the CRC-8 check, as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate,

and contain the ONU's LLID (frame accepted) as defined in

IEEE Std 802.3, Clause 65 and Clause 76, as appropriate.

This object is applicable for an ONU only.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3OmpEmulationOnuLLIDNotBroadcast";

}

leaf ompe-pkts-in-match-onu-llid-broadcast {

when

"../../ompe-mode = 'onu'";

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, pass the CRC-8 check, as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate,

and contain the broadcast bit in the LLID and the ONU's LLID

(frame accepted) as defined in IEEE Std 802.3, Clause 65 and

Clause 76, as appropriate.

This object is applicable for an ONU only.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3OmpEmulationBroadcastBitPlusOnuLlid";

}

leaf ompe-pkts-in-not-match-onu-llid-not-broadcast {

when

"../../ompe-mode = 'onu'";

type yang:counter64;

units frames;

config false;

description

"A count of frames received that contain a valid SLD field,

as defined in IEEE Std 802.3, 65.1.3.3.1 or 76.2.6.1.3.1, as

appropriate, pass the CRC-8 check, as defined in

IEEE Std 802.3, 65.1.3.3.3 or 76.2.6.1.3.3, as appropriate,

do not contain the broadcast bit in the LLID and do not contain

the ONU's LLID (frame is NOT accepted) as defined in

IEEE Std 802.3, Clause 65 and Clause 76, as appropriate.

This object is applicable for an ONU only.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3OmpEmulationNotBroadcastBitNotOnuLlid";

}

}

container thresholds-trx {

if-feature

trx-power-level-reporting-supported;

description

"This container defines a set of optical transceiver

thresholds of an Ethernet interface implementing MPCP

as defined in IEEE Std 802.3, Clause 60 and Clause 75.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfEntry";

leaf trx-power-in-low-threshold {

if-feature

trx-power-level-reporting-supported;

type int32;

units "0.1 dBm";

description

"This object reflects the current setting of low alarm

threshold for the input power into the optical receiver.

If the value reported in 'trx-power-in' object drops below

the value set in 'trx-power-in-low-threshold', a

'trx-power-in-low-threshold-crossing' event is generated.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfLowerInputPowerThreshold";

}

leaf trx-power-in-high-threshold {

if-feature

trx-power-level-reporting-supported;

type int32;

units "0.1 dBm";

description

"This object reflects the current setting of high alarm

threshold for the input power into the optical receiver. If

the value reported in 'trx-power-in' object exceeds the

value set in 'trx-power-in-high-threshold', a

'trx-power-in-high-threshold-crossing' event is generated.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfUpperInputPowerThreshold";

}

leaf trx-power-out-low-threshold {

if-feature

trx-power-level-reporting-supported;

type int32;

units "0.1 dBm";

description

"This object reflects the current setting of low alarm

threshold for the output power out of the optical

transmitter. If the value reported in 'trx-power-out' object

drops below the value set in 'trx-power-out-low-threshold',

a 'trx-power-out-low-threshold-crossing' event is generated.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfLowerOutputPowerThreshold";

}

leaf trx-power-out-high-threshold {

if-feature

trx-power-level-reporting-supported;

type int32;

units "0.1 dBm";

description

"This object reflects the current setting of high alarm

threshold for the output power out of the optical

transmitter. If the value reported in 'trx-power-out' object

exceeds the value set in 'trx-power-out-high-threshold', a

'trx-power-out-high-threshold-crossing' event is generated.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfUpperOutputPowerThreshold";

}

}

container statistics-trx {

if-feature

trx-power-level-reporting-supported;

description

"This container defines a set of optical transceiver

statistics counters of an Ethernet interface implementing MPCP

as defined in IEEE Std 802.3, Clause 60 and Clause 75.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfEntry";

leaf trx-power-in-signal-detect {

type boolean;

config false;

description

"This object indicates whether a valid optical signal was

detected (when read as 'true') or not (when read as 'false')

at the input to the optical transceiver.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfSignalDetect";

}

leaf trx-power-in {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the value of the input power, as

measured at the optical transceiver, expressed in units of

0.1 dBm.

At the ONU, the measurement is performed in a continuous

manner.

At the OLT, the measurement is performed in a burst-mode

manner, for each incoming data burst.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfInputPower";

}

leaf trx-power-in-low-15-minutes-bin {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the lowest value of the input power

during the period of the last 15 minutes, as measured at the

optical transceiver, and expressed in units of 0.1 dBm.

At the ONU, the measurement is performed in a continuous

manner and stored in a rolling 15-minutes' long observation

bin.

At the OLT, the measurement is performed in a burst-mode

manner, for each incoming data burst, and stored in a

rolling 15-minutes' long observation bin.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfLowInputPower";

}

leaf trx-power-in-high-15-minutes-bin {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the highest value of the input power

during the period of the last 15 minutes, as measured at the

optical transceiver, and expressed in units of 0.1 dBm.

At the ONU, the measurement is performed in a continuous

manner and stored in a rolling 15-minutes' long observation

bin.

At the OLT, the measurement is performed in a burst-mode

manner, for each incoming data burst, and stored in a

rolling 15-minutes' long observation bin.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfHighInputPower";

}

leaf trx-power-out-signal-detect {

type boolean;

config false;

description

"This object indicates whether a valid optical signal was

detected (when read as 'true') or not (when read as 'false')

at the output from the optical transceiver.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfTransmitAlarm";

}

leaf trx-power-out {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the value of the output power, as

measured at the optical transceiver, expressed in units of

0.1 dBm.

At the ONU, the measurement is performed in a burst-mode manner

for each outgoing data burst.

At the OLT, the measurement is performed in a continuous manner.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfOutputPower";

}

leaf trx-power-out-low-15-minutes-bin {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the lowest value of the output power

during the period of the last 15 minutes, as measured at the

optical transceiver, and expressed in units of 0.1 dBm.

At the ONU, the measurement is performed in a burst-mode

manner and stored in a rolling 15-minutes' long observation

bin.

At the OLT, the measurement is performed in a continuous

manner, for each incoming data burst, and stored in a

rolling 15-minutes' long observation bin.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfLowOutputPower";

}

leaf trx-power-out-high-15-minutes-bin {

type int32;

units "0.1 dBm";

config false;

description

"This object reflects the highest value of the output power

during the period of the last 15 minutes, as measured at the

optical transceiver, and expressed in units of 0.1 dBm.

At the ONU, the measurement is performed in a burst-mode

manner and stored in a rolling 15-minutes' long observation

bin.

At the OLT, the measurement is performed in a continuous

manner, for each incoming data burst, and stored in a

rolling 15-minutes' long observation bin.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfHighOutputPower";

}

}

container statistics-pon-fec {

when

"(../fec-capability = 'supported') and

(../fec-mode = 'enabled-Tx-Rx')";

if-feature

fec-supported;

config false;

description

"This container defines a set of FEC-related statistics

counters of an Ethernet interface implementing MPCP, as

defined in IEEE Std 802.3, Clause 65 and Clause 76.";

reference

"IEEE Std 802.3.1, dot3OmpEmulationStatEntry";

leaf fec-code-group-violations {

type yang:counter64;

units code-group;

config false;

description

"For 1G-EPON, it is a count of the number of times an

invalid codeword is received, other than the /V/

code-group. The /V/ denotes a special 8b10b codeword of

the IEEE Std 802.3 Clause 36 1000 Mb/s PCS layer, reused

in 1G-EPON.

For 10G-EPON, it is a count of the number of times an

invalid codeword is received.

This object is applicable for an OLT and an ONU. At the

OLT, it has a distinct value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.5.1.1.14";

}

leaf fec-buffer-head-coding-violations {

type yang:counter64;

units code-group;

config false;

description

"For 1000BASE-PX PHY, this object represents the count of

the number of invalid code-group received directly from the

link.

For 10GBASE-PR or 10/1GBASE-PRX PHYs, this object is always

set to zero.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3EponFecBufferHeadCodingViolation ";

}

leaf fec-code-word-corrected-errors {

type yang:counter64;

units code-group;

config false;

description

"For 1000BASE-PX, 10GBASE-PR or 10/1GBASE-PRX PHYs, it is a

count of corrected FEC blocks.

This counter increments by one for each received FEC block

that contained detected errors and was corrected by the FEC

function in the PHY.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.5.1.1.17";

}

leaf fec-code-word-uncorrected-errors {

type yang:counter64;

units code-group;

config false;

description

"For 1000BASE-PX, 10GBASE-PR or 10/1GBASE-PRX PHYs, it is a

count of uncorrectable FEC blocks.

This counter increments by one for each received FEC block

that contained detected errors and was not corrected by the

FEC function in the PHY.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3, 30.5.1.1.18";

}

}

list mpcp-queues {

key mpcp-queue-index;

description

"An instance of this object for each value of

'mpcp-queue-index' is created when a new logical link is

registered and deleted when the logical link is deregistered.

All instances of this object in the ONU associated with the

given logical link are then mapped in to a REPORT MPCPDU, when

generated.

+-----------------------------------+

| Destination Address |

+-----------------------------------+

| Source Address |

+-----------------------------------+

| Length/Type |

+-----------------------------------+

| OpCode |

+-----------------------------------+

| TimeStamp |

+-----------------------------------+

| Number of Queue Sets |

+-----------------------------------+ -|

| Report bitmap | |

+-----------------------------------+ |

| Queue 0 report | |

+-----------------------------------+ | repeated

| Queue 1 report | | for every

+-----------------------------------+ | Queue Set

| Queue 2 report | |

+-----------------------------------+ |

| Queue 3 report | |

+-----------------------------------+ |

| Queue 4 report | |

+-----------------------------------+ |

| Queue 5 report | |

+-----------------------------------+ |

| Queue 6 report | |

+-----------------------------------+ |

| Queue 7 report | |

+-----------------------------------+ -|

| Pad/reserved |

+-----------------------------------+

| FCS |

+-----------------------------------+

The 'Queue N report' field reports the current occupancy of

each upstream transmission queue associated with the given

logical link.

The 'Number of Queue Sets' field defines the number of

reported 'Queue N report' sets.

For each Queue Set, the 'Report bitmap' field defines which

upstream transmission queues are present in the REPORT MPCPDU.

Although the REPORT MPCPDU can report current occupation for

up to 8 upstream transmission queues in a single REPORT MPCPDU

, the actual number is flexible. The 'mpcp-queue-group'

grouping has a variable size that is limited by value of

'mpcp-maximum-queue-count-per-report' object, allowing ONUs

report the occupancy of fewer upstream transmission queues, as

needed.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and every queue.

At the ONU, it has a distinct value for every queue.";

reference

"IEEE Std 802.3.1, dot3ExtPkgQueueEntry";

leaf mpcp-queue-index {

type uint8 {

range "0 .. 7" {

description

"This object indicates the identity (index) of a queue in the

ONU. It can have a value between 0 and 7, limited by the value

stored in the 'mpcp-maximum-queue-count-per-report' object.";

reference

"See 'mpcp-maximum-queue-count-per-report' object";

}

}

description

"An object represents the index of an upstream transmission

queue storing subscriber packets. The size (occupancy) of

the upstream transmission queue identified by this object is

then reported within REPORT MPCPDU, defined in

IEEE Std 802.3, Clause 64 and Clause 77.

This object indicates the identity (index) of a queue in the ONU.

It can have a value between 0 and 7, limited by the value stored

in the 'mpcp-maximum-queue-count-per-report' object.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and each queue.

At the ONU, it has a distinct value for each queue.";

reference

"IEEE Std 802.3.1, dot3QueueIndex";

}

leaf mpcp-queue-threshold-count {

type uint8 {

range "0 .. 7" {

description

"This object indicates the identity (index) of a queue in the

ONU. It can have a value between 0 and 7, limited by the value

stored in the 'mpcp-maximum-queue-count-per-report' object.";

reference

"See 'mpcp-queue-threshold-count-max' object";

}

}

description

"This object reflects the number of reporting thresholds for

the specific upstream transmission queue, reflected in the

REPORT MPCPDU, as defined in IEEE Std 802.3,

Clause 64 and Clause 77.

Each 'Queue set' provides information for the specific

upstream transmission queue occupancy of frames below the

matching reporting threshold.

A read of this object reflects the number of reporting

thresholds for the specific upstream transmission queue.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and each queue.

At the ONU, it has a distinct value for each queue.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectReportNumThreshold";

}

leaf mpcp-queue-threshold-count-max {

type uint8 {

range "0 .. 7" {

description

"This object can have a value between 0 and 7.";

}

}

description

"This object reflects the maximum number of reporting

thresholds for the specific upstream transmission queue,

reflected in the REPORT MPCPDU, as defined in

IEEE Std 802.3, Clause 64 and Clause 77.

A read of this object reflects the maximum number of

reporting thresholds for the specific upstream transmission

queue.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and each queue.

At the ONU, it has a distinct value for each queue.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectReportMaximumNumThreshold";

}

list mpcp-queue-thresholds {

when

"../mpcp-queue-threshold-count > 0";

key mpcp-queue-set-index;

max-elements 7;

description

"An instance of this object for each value of

'mpcp-queue-index' is created when a new logical link is

registered and deleted when the logical link is

deregistered.

All instances of this object in the ONU associated with the

given logical link are then mapped in to a REPORT MPCPDU,

when generated.

+-----------------------------------+

| Destination Address |

+-----------------------------------+

| Source Address |

+-----------------------------------+

| Length/Type |

+-----------------------------------+

| OpCode |

+-----------------------------------+

| TimeStamp |

+-----------------------------------+

| Number of Queue Sets |

+-----------------------------------+ -|

| Report bitmap | |

+-----------------------------------+ |

| Queue 0 report | |

+-----------------------------------+ | repeated for

| Queue 1 report | | every

+-----------------------------------+ | Queue Set

| Queue 2 report | |

+-----------------------------------+ |

| Queue 3 report | |

+-----------------------------------+ |

| Queue 4 report | |

+-----------------------------------+ |

| Queue 5 report | |

+-----------------------------------+ |

| Queue 6 report | |

+-----------------------------------+ |

| Queue 7 report | |

+-----------------------------------+ -|

| Pad/reserved |

+-----------------------------------+

| FCS |

+-----------------------------------+

The 'Queue N report' field reports the current occupancy of

each upstream transmission queue associated with the given

logical link.

The 'Number of Queue Sets' field defines the number of

reported 'Queue N report' sets.

For each Queue Set, the 'Report bitmap' field defines which

upstream transmission queues are present in the

REPORT MPCPDU. Although the REPORT MPCPDU can report current

occupation for up to 8 upstream transmission queues in a

single REPORT MPCPDU, the actual number is flexible.

The 'mpcp-queue-group' grouping has a variable size that is

limited by value of 'mpcp-maximum-queue-count-per-report'

object, allowing ONUs to report the occupancy of fewer upstream

transmission queues, as needed.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and every queue.

At the ONU, it has a distinct value for every queue.";

reference

"IEEE Std 802.3.1, dot3ExtPkgQueueSetsEntry";

leaf mpcp-queue-set-index {

type uint8 {

range

"0 .. 7" {

description

"This object indicates the identity (index) of a queue in

the ONU. It can have a value between 0 and 7, limited by

the value stored in the

'mpcp-maximum-queue-count-per-report' object.";

reference

"See 'mpcp-maximum-queue-count-per-report' object";

}

}

description

"This object represents the index of the Queue Set for the

'mpcp-queue-set-group' grouping. The size (occupancy) of

the upstream transmission queues belonging to the given

Queue Set is then reported within REPORT MPCPDU, defined

in IEEE Std 802.3, Clause 64 and Clause 77.

This object can have a value between 0 and 7, limited by

the value stored in the 'mpcp-queue-threshold-count-max'

object.";

reference

"IEEE Std 802.3.1, dot3QueueSetIndex";

}

leaf mpcp-queue-set-threshold {

type uint64;

units "TQ";

default "0";

description

"This object defines the value of a reporting threshold

for each Queue Set stored in REPORT MPCPDU defined in

IEEE Std 802.3, Clause 64 and Clause 77.

The number of Queue Sets for each upstream transmission

queue is defined in the 'mpcp-queue-threshold-count'

object.

Within REPORT MPCPDU, each Queue Set provides information

on the current upstream transmission queue occupancy for

frames below the matching threshold.

The value stored in this object is expressed in the units

of Time quanta (TQ), where 1 TQ = 16 ns.

A read of this object provides the current threshold value

for the specific upstream transmission queue.

This object is applicable for an OLT and an ONU. At the

OLT, it has a distinct value for each logical link, each

queue, and each Queue Set.

At the ONU, it has a distinct value for each queue and

each Queue Set.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectReportThreshold";

}

}

leaf mpcp-queue-pkts-in {

type yang:counter64;

config false;

description

"This object reflects the number of frame reception events

into the corresponding upstream transmission queue. This

object is incremented by one for each frame received, when

it is input into the associated queue.

The queue index matches the queue number in REPORT MPCPDU,

as defined in IEEE Std 802.3, Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link and each queue.

At the ONU, it has a distinct value for each queue.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3ExtPkgStatRxFramesQueue";

}

leaf mpcp-queue-pkts-out {

when

"../../mpcp-mode = 'onu'";

type yang:counter64;

config false;

description

"This object reflects the number of frame transmission

events from the corresponding upstream transmission queue.

This object is incremented by one for each frame transmitted

, when it is output from the associated queue.

The queue index matches the queue number in REPORT MPCPDU,

as defined in IEEE Std 802.3, Clause 64 and Clause 77.

This object is applicable for an ONU only. At the ONU, it

has a distinct value for each queue.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3ExtPkgStatTxFramesQueue";

}

leaf mpcp-queue-pkts-drop {

when

"../../mpcp-mode = 'onu'";

type yang:counter64;

config false;

description

"This object reflects the number of frame drop events from

the corresponding upstream transmission queue. This object

is incremented by one for each frame dropped in the

associated queue.

The queue index matches the queue number in REPORT MPCPDU,

as defined in IEEE Std 802.3, Clause 64 and Clause 77.

This object is applicable for an ONU only. At the ONU, it

has a distinct value for each queue.

Discontinuities in the value of this counter can occur at

re-initialization of the management system, and at other times as

indicated by the value of the 'discontinuity-time' leaf defined in

the ietf-interfaces YANG module (IETF RFC 7223).";

reference

"IEEE Std 802.3.1, dot3ExtPkgStatDroppedFramesQueue";

}

}

leaf fec-capability {

if-feature

fec-supported;

type fec-capability;

config false;

description

"This object is used to identify whether the given interface

is cable of supporting FEC or not.";

}

leaf mpcp-mode {

type mpcp-mode;

config false;

description

"This object is used to identify the operational state of the

MultiPoint MAC Control sublayer as defined in

IEEE Std 802.3, Clause 64 and Clause 77.

Reading 'olt' for an OLT (controller) mode and 'onu' for an ONU

(client) mode.

This object is used to identify the operational mode for the

MPCP objects.

This object is applicable for an OLT, with the same value for

all logical links, and for an ONU.";

reference

"IEEE Std 802.3, 30.3.5.1.3";

}

leaf mpcp-sync-time {

type uint64;

units "TQ (16ns)";

config false;

description

"This object reports the 'sync lock time' of the OLT

receiver in units of Time Quanta (TQ; 1 TQ = 16 ns; see

IEEE Std 802.3, Clause 64 and Clause 77).

The value returned shall be equal to [sync lock time ns]/16,

rounded up to the nearest TQ. If this value exceeds

4,294,967,295 TQ, the value 4,294,967,295 TQ shall be returned.

This object is applicable for an OLT, with distinct values for

all logical links, and for an ONU.";

reference

"IEEE Std 802.3, 64.3.3.2";

}

leaf mpcp-logical-link-id {

type mpcp-supported;

config false;

description

"This object is used to identify the operational state of the

MultiPoint MAC Control sublayer as defined in

IEEE Std 802.3, Clause 64 and Clause 77.

Reading 'olt' for an OLT (controller) mode and 'onu' for an ONU

(client) mode.

This object is used to identify the operational mode for the

MPCP objects.

This object is applicable for an OLT, with the same value for

all logical links, and for an ONU.";

reference

"IEEE Std 802.3, 30.3.5.1.3";

}

leaf mpcp-remote-mac-address {

type yang:mac-address;

config false;

description

"This object identifies the source\_address parameter of the

last MPCPDUs passed to the MAC Control. This value is updated

on reception of a valid frame with:

1) a destination Field equal to the reserved multicast address

for MAC Control as specified in IEEE Std 802.3, Annex 31A;

2) the lengthOrType field value equal to the reserved Type for

MAC Control as specified in IEEE Std 802.3, Annex 31A;

3) an MPCP Control opcode value equal to the subtype reserved for

MPCP as specified in IEEE Std 802.3, Annex 31A.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.

The value reflects the MAC address of the remote entity and

therefore the OLT holds a value for each LLID, which is

the MAC address of the ONU.

The ONU has a single value that is the OLT MAC address.";

reference

"IEEE Std 802.3, 30.3.5.1.5";

}

leaf mpcp-logical-link-state {

type mpcp-logical-link-state;

config false;

description

"This object identifies the registration state of the

MultiPoint MAC Control sublayer as defined in

IEEE Std 802.3, Clause 64 and Clause 77.

When this object has the enumeration 'unregistered', the

interface is unregistered and may be used for registering

a link partner.

When this object has the enumeration 'registering',

the interface is in the process of registering a link-partner.

When this object has the enumeration 'registered', the

interface has an established link-partner.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3, 30.3.5.1.6";

}

leaf mpcp-elapsed-time-out {

type uint64;

units "TQ (16ns)";

config false;

description

"This object reports the interval from the last MPCP frame

transmission in increments of Time Quanta (TQ; 1 TQ = 16 ns;

see IEEE Std 802.3, Clause 64 and Clause 77).

The value returned shall be equal to [interval from last MPCP

frame transmission on this Ethernet interface, expressed

in ns]/16. If this value exceeds 4,294,967,295 TQ, the value

4,294,967,295 TQ shall be returned.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3, 30.3.5.1.19";

}

leaf mpcp-elapsed-time-in {

type uint64;

units "TQ (16ns)";

config false;

description

"This object reports the interval from the last MPCP frame

reception in increments of Time Quanta (TQ; 1 TQ = 16 ns; see

IEEE Std 802.3, Clause 64 and Clause 77).

The value returned shall be equal to [interval from last MPCP

frame reception on this Ethernet interface, expressed in

ns]/16. If this value exceeds 4,294,967,295 TQ, the value

4,294,967,295 TQ shall be returned.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3, 30.3.5.1.20";

}

leaf mpcp-round-trip-time {

type uint16;

units "TQ (16ns)";

config false;

description

"This object reports the MPCP round trip time in increments

of Time Quanta (TQ; 1 TQ = 16 ns; see IEEE Std 802.3,

Clause 64 and Clause 77).

The value returned shall be equal to [round trip time in ns]/16.

If this value exceeds 65,535 TQ, the value 65,535 TQ shall be

returned.

This object is applicable for an OLT. It has a distinct value for

each logical link.";

reference

"IEEE Std 802.3, 30.3.5.1.21";

}

leaf mpcp-maximum-grant-count {

type uint8;

config false;

description

"This object reports the maximum number of grants that an

ONU can store for handling. The maximum number of grants that

an ONU can store for handling has a range of 0 to 255.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link. At the OLT, the value should be zero.";

reference

"IEEE Std 802.3, 30.3.5.1.24";

}

leaf mpcp-logical-link-count {

type mpcp-llid-count;

units LLID;

config false;

description

"This object reflects the number of logical links registered

on the OLT / ONU. The LLID field, as defined in the

IEEE Std 802.3, Clause 65 and Clause 76, is a 2-byte register

(15-bit field and a broadcast bit) limiting the number of

logical links to 32,768.

This object is initialized to the value of 0 when the

OLT / ONU is powered up.

This object is applicable for an OLT and an ONU. It has the same

value for all logical links.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectNumberOfLLIDs";

}

leaf mpcp-maximum-queue-count-per-report {

type mpcp-maximum-queue-count-per-report;

config false;

description

"This object reflects the maximum number of queues (0-7) that can be

accepted by the OLT in a single REPORT MPCPDU, as defined in

IEEE Std 802.3, Clause 64 and Clause 77.

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgObjectReportMaximumNumQueues";

}

leaf ompe-mode {

type ompe-mode;

config false;

description

"This object indicates the mode of operation of the

Reconciliation Sublayer for Point-to-Point Emulation (see

IEEE Std 802.3, 65.1 or 76.2 as appropriate).

The value of 'unknown' is assigned in initialization; true

state or type is not yet known.

The value of 'olt' is assigned when the sublayer is operating

in OLT mode.

The value of 'onu' is assigned when the sublayer is operating

in ONU mode.

This object is applicable for an OLT and an ONU. It has the same

value for each logical link.";

reference

"IEEE Std 802.3, 30.3.7.1.2";

}

leaf trx-data-reliable {

if-feature

trx-power-level-reporting-supported;

type boolean;

config false;

description

"This object indicates whether data contained in individual

counters in 'statistics-trx' container are reliable (when read

as 'true') or not (when read as 'false').

This object is applicable for an OLT and an ONU. It has a distinct

value for each logical link.";

reference

"IEEE Std 802.3.1, dot3ExtPkgOptIfSuspectedFlag";

}

}

}